

APIOS AMERICANA Medic., forma **pilosa** Steyermark, f. nov., a forma typica recedit caulibus foliisque pilosis.—MISSOURI: banks of Mud creek, T 26 N, R 7 E, sect. 20, 2 mi. northwest of Rombauer, Wappapello Purchase Unit, Clark National Forest, Butler Co., July 7, 1936, *Steyermark 11390*, TYPE in Mo. Bot. Gard. herb; along Little Paddy creek, 5 mi. southwest of Slabtown, Texas Co., Gardner National forest, Aug. 25, 1937, *Steyermark 25316*.

This form, with hairs spreading on stems and scattered over the leaf surfaces, is of infrequent occurrence in Missouri, occurring with the normally glabrous or glabrate type.

IMPATIENS PALLIDA Nutt., forma **dichroma** Steyermark, f. nov., a forma typica recedit petalis superioribus lateralibusque albis et sepalo posteriore luteo.—MISSOURI: wooded base of bluffs along Mississippi river, 1½ mi. northwest of Louisiana, T 54 N, R 2 W, sect. 11, Pike Co., Sept. 6, 1937, *Steyermark 25927*, TYPE in Mo. Bot. Gard. herb.

Two other color variants of the normally yellow-flowered *Impatiens pallida* have already been described, one in 1904 by Clute, *I. pallida* var. *alba* with pure white flowers (Am. Bot. **7**: 67. 1904), and the other in 1920 by Jennings, *I. pallida* f. *speciosa* with cream-colored flowers which have the ventral inner surface of the saccate sepal dotted with red (Ohio Journ. Sci. **20**: 204. 1920). The form here described is two-colored, the upper and lateral petals being white, while the posterior saccate sepal is yellow.

RUDBECKIA HIRTA L., forma **homochroma** Steyermark, f. nov., a forma typica recedit disci floribus luteis.—MISSOURI: upland woods, 10 mi. west of New Liberty, Fristoe Purchase Unit, Clark National Forest, Oregon Co., July 3, 1936, *Steyermark 11345*, TYPE in Mo. Bot. Gard. herb.

Numerous color variations of this species have already been described. The above described form, however, with the disk- as well as the ray-florets yellow throughout, has not been recorded. This form was found with the normally bi-colored type.

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A FLORA OF OKLAHOMA.—There has recently appeared a rather sumptuous, well printed and neatly illustrated book of more than 700 pages and nearly 500 text-figures upon the Oklahoma Flora.¹ As the first extensive

¹ OKLAHOMA FLORA (Illustrated) by THOMAS R. STEMEN and W. STANLEY MYERS. Harlow Publishing Corp., Oklahoma City, Okla. \$6.00.

volume professing to cover the flora of the state it is noteworthy; but, although one can heartily praise the good intent which lay back of its production and the excellent work of the publishers, it is more difficult, after even a casual examination, for an experienced taxonomist to give unqualified praise to the taxonomic content. The book restricts itself to the more conspicuous groups and does not include the extensive and important but difficult grasses, sedges and rushes. It thus stamps itself as a "popular" rather than a scientific work, but since it is intended for "students of . . . botany" it is desirable to consider it from the standpoint of that science.

"The American Code of Nomenclature has been followed, and synonyms from the International Code are given where different." Several years ago the American Code was gasping its last lingering breath among the leading botanists, though something related to it but not always recognizable has been followed by Small alone among outstanding American taxonomists. The new book, then, is often a close follower of Small, rather than of the American Code, but it frequently departs from him. In generic and specific segregation it is divided between the extreme Smallian splitting and the most conservative standpoint. In holding *Juniperus*, *Smilax*, *Arenaria*, *Acer*, *Vitis* and certain other genera intact the authors show highly commendable conservatism; but in maintaining *Ionoxalis* Small and *Xanthoxalis* Small and the segregates of *Euphorbia*, *Rhus* and *Oenothera* they are on less secure ground. What would happen to *Oxalis* if the extreme splitter got outside the north temperate zone? He would very soon discover leafy-stemmed plants with violet petals, bulbous and acaulescent plants with yellow petals and endless other combinations of characters until he would be sore pressed to invent enough "micronyms."

Turning to the botanical content of the book, a botanist cognizant of current literature, even though he has never been in Oklahoma, is at once struck by the great number of species and genera he chances to know about which are not mentioned. There is no indication in the Preface that the authors consulted or even knew about the extensive collections accumulated at the State University and outside, and they too evidently are unfamiliar with important current taxonomic, floristic and monographic literature. Even the pages of geographically remote RHODORA, which is available at the State University if not elsewhere in Oklahoma, contain special articles recording for the state *Calopogon pulchellus*, *Glottidium vesicarium*, *Phacelia congesta* and *Hedeoma camporum*, but these species and the first two genera did not get into the new book. Other standard literature supplies very many additional specific or even generic additions. Only a few out of the many will here be noted, merely to indicate the literature which should be consulted before undertaking a state flora. As far back as 1900 Coulter & Rose, in their *Monograph of the North American Umbelliferae*, gave citations of Oklahoma specimens in 3 genera which the authors of the new book do not include: *Apiastrum*, *Polytaenia* and *Lomatium*. Coming down to a few more current monographs, Anderson & Woodson's *Species of Tradescantia Indigenous to the United States* (1935) cites from Oklahoma 3 species, *T. ozarkana*, *T. Ernestiana* and *T. Tharpii*, none of them in the later volume. By skimming Rydberg's treatment of the *Astragalinae* in the *North American Flora* (1929) 3 additional species of *Astragalus*, *A. cyaneus*, *A. Engelmanni*

and *A. puniceus*, could have been picked up. Steyermark's monograph of *Grindelia* (1934) cites a third Oklahoma species; and Pennell's *Scrophulariaceae of Eastern Temperate North America* (1935) adds at least 12 more Oklahoma species. Pennell gives detailed maps as well as citations of specimens of each species, consequently these overlooked Oklahoma species can be readily looked up; but it was a pity to miss *Penstemon oklahomensis*!

The failure to study the recent critical, taxonomic literature has not merely led to the overlooking of probably hundreds of conspicuous Oklahoma species; it has led to the inclusion of many which, presumably, are not actually in the state; such, to cite a few cases, as *Cuthbertia graminea*, *Talinum teretifolium* and *Lobelia elongata*. As to the first of these, *Cuthbertia graminea* Small, its own author, in his *Manual*, restricts it to "Fla. to N. C.;" Anderson & Woodson, reducing it to varietal rank under *Tradescantia rosea*, similarly restrict its range. As early as 1900 Holzinger (Asa Gray Bull. viii. 38) showed that no material from west of the Mississippi is referable to *Talinum teretifolium*. The same conclusion was reached by Fassett in his study of the genus (RHODORA, xxx. 206). By McVaugh, who saw the material of the genus in most of our larger herbaria, *Lobelia elongata* is restricted to the outer coastal plain from Georgia to Delaware (RHODORA, xxxviii. 286).

Other studies of the types and the consequent changes involved have failed to influence the authors of the new book. In numbers of RHODORA, at one time or another, I have shown, for example, that the type of *Galium tinctorium* L. (1753) is not the plant to which that name has been erroneously applied but is the small and scabrous northern *G. Claytoni* Michx. (1803); that the type of *Geum virginianum* L. is the plant described more than a century later as *G. flavum* (Porter) Bicknell; that *Draba caroliniana* and *Ranunculus delphinifolius* must take earlier specific names. Dr. Perry, similarly, has shown that the name *Evolvulus pilosus* Nutt. is invalid and that it must be replaced by another. In 1905 (Torreya, v. 128) Harper clearly demonstrated that the interpretations of *Xyris flexuosa* and *X. torta* have suffered tortion or been twisted, and that the stout plant of pine barren with many twining bulbs, large spikes and fimbriate sepals (*X. torta* of many treatments, *X. arenicola* Small) is true *X. flexuosa*. The slender bog-plant with small spikes and merely ciliate sepals, which has erroneously passed as *X. flexuosa*, proves to be true *X. torta*. The plants are correctly treated in Small's *Manual*, yet the authors of the Oklahoma Flora have failed to make the change; their plant is *X. torta*, not *X. flexuosa*. This reversing of the application of names has confused others and doubtless will continue to do so. In an extended illustrated monograph of the group I attempted to clarify the identities of *Potamogeton diversifolius* and *P. dimorphus* (at the same time citing from Oklahoma material of *P. panormitanus*, which failed to get into the new book). These and very many other recent studies based upon accurate examination of the type-specimens would greatly alter many interpretations in the *Oklahoma Flora*. It is too bad that its authors did not know about them or take them into account.

In short, the details of exact taxonomy, nomenclature, synonymy and bibliography have been too much for the authors. For example; the late distinguished Sereno Watson appears (p. 170) as "S. Watts" and *Verbena Halei* becomes *V. "Haleii."* It is perfectly well known to all who have

kept up with the current authoritative literature on our flora that the plant published as *Scrophularia leporella* Bicknell (1896) was described 82 years earlier as *S. lanceolata* Pursh (1814); consequently Pursh's name is now generally revived. Similarly, that *Verbena angustifolia* Michx. (1803) is antedated by the quite different *V. angustifolia* Mill. (1768) with the result that Michaux's name must be replaced by the first later one, *V. simplex* Lehm. (1825). Nevertheless, in the new book *Scrophularia leporella* and *Verbena angustifolia* are maintained and the proper names, *S. lanceolata* and *V. simplex*, respectively, reduced to synonymy! And what about *Suaeda americana*? The latter is a depressed plant with remarkably dissimilar sepals and it is known only from the lower St. Lawrence in Quebec to the coast of Maine. It is not mentioned, naturally, in the Southern floras of Small; and in the North American Flora Standley maintains it with the range above given. *S. linearis* is a tall and erect southern species with small and quite uniform sepals. Why, then, does *Suaeda americana* appear in the new book as a synonym of *S.* (or *Dondia*) *linearis*? Do the authors really know *S. americana*? As a synonym of *Lepidium densiflorum* we find *L.* "*apetalum* A. Gray." Where did Gray publish *L. apetalum*? But perhaps as amazing as anything is "**Arenaria Nuttallii** (T. and G.) Stemen and Meyers"; because one of the best known species of *Arenaria* on the Pacific slope is *A. Nuttalli* Pax (1893), the name maintained, correctly, in the *Synoptical Flora* and other works which should be familiar to authors before they are in position to propose new combinations.

The authors are both teachers of science and intend their book to "be of service to students of biology and botany." It is at least cheering to know that in Oklahoma at least botany has not yet got submerged in "biology" and consequently crowded out by zoology or physiology, and it is to be hoped that the book will start active and careful study of the flora. It is feared, however, that the keys have a specious simplicity which may carry the inexperienced off the right track and will often give him distorted morphological concepts. Take, for instance, the key to the families of frondose *Pteridophyta*.

"A. Plants with creeping rootstocks.

1a. *Fronde not radiately 4-foliate.*

2a. Sori borne in panicles.

2b. Sori borne on back or margins of fronds or leaflets.

(*Onoclea* appears to be different.)

1b. *Fronde radiately 4-foliate*

B. Plants without creeping rootstocks.

4. OSMUNDACEAE.

1. POLYPODIACEAE.

3. MARSILIACEAE.

2. OPHIOGLOSSACEAE.'

As to call **A**, it will be pretty difficult for the beginners, who collect ferns (most wisely) without digging up the whole plant, to convince themselves whether some of their specimens of *Osmunda*, *Asplenium*, *Cheilanthes*, etc. have creeping rootstocks; this is a rather baffling character in case of plants with the short and erect or ascending rhizome deeply buried amongst old stipes. Again, isn't it unfortunate to tell the beginner that the fronds of *Marsilea* are 4-leaved ("4-foliate")? 4-parted or 4-foliate would be better.

Or consider the first divisions under the caulescent Monocotyledons.

"1a. *Perianth wanting or of bristles.*

2a. Immersed aquatics, branching and leafy, the upper leaves often floating.

3a. Carpels distinct.

3b. Carpels united.

2b. Terrestrial or marsh plants.

Leaves petioled; flowers in dense spikes subtended by an enlarged bract.

Leaves not petioled, linear or sword-shaped; flowers in cylindric spikes.

1a. **ZANNICHELLIACEAE.**

1b. **NAIADACEAE.**

3. **ARACEAE.**

1. **TYPHACEAE."**

Now, if *Najas*, the only genus of the *Najadaceae* as here maintained, is to be reached through the key only because it has "Carpels united," where will the trusting student come out? Rendle, the monographer of the group, defines the female flower as "a naked ovary . . . containing a single anatropous ovule"; Hutchinson says "ovary of 1 carpel, 1-celled." These definitions, needless to say, are correct; but pity the youngster who tries to identify *Najas* by means of a key defining the characteristic family merely by "Carpels united." And how will the beginner ever separate, by the key, *Acorus* of the *Araceae* from *Typha*? If the authors had simply said "Sweet Flag" and "Cat-tail" almost any child would understand, but it requires a person long experienced with errors and knowing what not to believe to differentiate them by the key to families. Try it. *Acorus*, by the key, should have "*Perianth wanting or of bristles*;" nevertheless, the generic description (p. 38) correctly assigns it a "*Perianth* of 6 membranous concave sepals." *Typha* is distinguished by "Leaves not petioled, linear or sword-shaped; flowers in cylindric spikes." Isn't that a reasonable description of the superficial aspect of *Acorus*? There remains for *Acorus* (at least for the *Araceae*) "spikes subtended by an enlarged bract," with nothing said of the conspicuous, though caducous, bracts of *Typha*.

By many in this country, some of whom should know better, the function of a reviewer is to "boost" anything written, to praise the binding (in this case very attractive), the paper, the typography and the pictures (some of high quality) and to applaud the authors. But what of the SCIENCE of taxonomy? If that is important, as I feel it is, then we should certainly demand that the authors of books in that field intended for the service of "students of . . . botany" should be trained and accurate taxonomists (of whom there are very few), with a clear understanding of the vastness, the difficulty, the literature and the technique of the subject. The authors of the present book have the zeal and the love of their subject and their publishers have done a creditable piece of book-making. May the authors eventually give us a work which will more fully meet the exacting requirements of thorough taxonomic and floristic work.—
M. L. F.

A NEW SELENIA FROM TEXAS.—*SELENIA grandis* Martin, sp. nov., herba annua glabra; caulis prostratus vel paullo ascendens; folia bipinnatisecta; flores in pedunculis axillaribus elongatis; sepala inaequalia, oblongo-cuneiformia, appendiculata, maxima 15 mm. longa; petala flava, ovato-cuneiformia, ad 22 mm. longa, rotundata vel emarginata; fructus oblongus, 22 mm. longus, breviter stipitatus, vesiculis lunatis; stylus persistens, 4 mm. longus.